Lab: Teacher’s Notes

1. Rationale: This lab follows lectures on dynamic equilibrium and Le Chatelier’s Principle. This lab is used to reinforce the knowledge and new ideas gained during these classes. It demonstrates visually that chemical systems are dynamic and respond to changing conditions in predictable ways (observed through colour change)
2. Background Knowledge of Teacher: The instructor should have a basic understanding of chemistry principles, especially Le Chatelier’s Principle. The instructor should also be knowledgeable in appropriate handling and disposal of chemicals.
3. Diagram of Distribution (See A1)

* Students will work in pairs for this lab
* Students will label their 50mL beakers and collect the different solutions at the beginning of the lab
* Students will also collect the necessary equipment from the front of the room and bring them back to their bench
* Each student bench will have an inorganic waste container that they can empty into the larger inorganic waste container in the fume hood.
* One group of students will be selected to make the stock solution for reaction #2 and share with the rest of the class

1. Before the lab (instructor):

Obtain or make the following solutions for a class of 24 students:

* 0.1M CoCl2 (30mL)
* 0.1M FeCl3 (40 mL)
* 0.1M KSCN (40mL)
* 0.1M AgNO3 (20mL)
* Conc.(ie 12M) HCl (50mL)
* Prepare waste containers

1. Assessment of Evaluation

* Pre lab questions: Assessment for learning (Questions will be taken up as a class before the start of the lab)
* Lab: Assessment of learning (See A4)
* Post Lab questions: Assessment of learning (See A4)

1. Before the lab (student):

* Read over the lab protocol
* Answer pre lab questions
* Come up with potential procedures for reaction #2 of the lab protocol
* Review lab safety

1. Answer Key for Pre and Post Lab Questions (See A2)
2. Sample student observations (See A3)